

REMARKS

Claims 1-30 remain pending in this application.

Interview:

Applicants acknowledge, with appreciation, the personal interview conducted with Dr. Srivastava and Primary Examiner Ralph Gitomer on July 20, 2005. Each of the outstanding rejections were discussed and the arguments described below were presented for consideration by the Examiner. No agreement was reached at the interview, but the Examiner indicated that the arguments would be considered when presented in a reply to the outstanding Office Action. We appreciate the detailed content of the Office Action but disagree with the reasoning and conclusions of the Office for these reasons explained below.

Restriction/Election:

The Examiner has made the restriction requirement between claims 1-25 and claims 26-30 final. The Examiner has noted that rejoinder under M.P.E.P. 821.04 may be possible in this application when the claims in Group I are found allowable. Accordingly, claims 26-30 remain withdrawn from consideration but will be retained in this application.

Double Patenting:

Claims 1-25 have been rejected under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over several claims of U.S. Patent No. 5,919,689. While the Office acknowledges that the claims are not identical, it is the position of the Office that it would be obvious to one of ordinary skill to

substantiate the composition taught in the '689 patent with a nutrient medium to support microbial growth for sustained production of enzymes and to successfully employ said composition to coat an article with said composition. Aside from this bare conclusional statement, the Office has provided no evidence to support a motivation or suggestion in the prior art for adding a nutrient in the context of the claimed invention. Indeed, while it can be acknowledged that enzyme-secreting microorganisms do need nutrients to at least preserve their viability, the Office has provided no evidence of a suggestion or teaching of the desirability of adding a nutrient to the articles claimed in the '689 patent in any manner. In addition, the Office has provided no evidence or rationale to support the conclusion that there is a predictability of success in adding a nutrient to the article in the manner claimed. Accordingly, since the Office has not established any of the factual elements essential to an obviousness determination — i.e., motivation, expectation of success, and meeting the limitations of the claim — it has not established a *prima facia* case of obviousness and this rejection should be withdrawn.

Claims 1-25 have been rejected under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over several identified claims of U.S. Patent No. 6,342,386. While acknowledging that the conflicting claims are not identical, it is the position of the Office that they are not patentably distinct because the ingredients in the layers in the claimed article are essentially the same ingredients used in the method claimed in the '386 patent.

The position of the Office in this rejection is inconsistent with the position it has taken in maintaining the restriction requirement. Specifically, the Office has indicated

that article claims 1-25 are patentably distinct from claims 26-30 in the application directed to a method reducing growth of organisms on a surface, while in this double patenting rejection, the Office has taken the position that the same article claims are obvious over claims of the '386 patent directed to a method of removing undesired growth from a surface using substantially the same ingredients. It is not understood how the Office can maintain both of these positions simultaneously. Clarification is requested.

Unlike the claimed subject matter of the '386 patent, article claims 1-25 require that the article have a coating of at least two layers that are different, and independent claim 20 requires that a second layer contain a nutrient for the microorganism for the first layer. The Office has neither addressed these differences nor provided any factual basis for a motivation, expectation of success, or that each of these features is *per se* known - all necessary to support a *prima facia* case of obviousness. Accordingly, this rejection should be withdrawn.

Claim Rejections 35 U.S.C. § 112, first paragraph:

Claims 1-25 have been rejected under 35 U.S.C. § 112, first paragraph as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. While there are two separate rejections in paragraphs 11 and 12 of the Office Action, this response will address both rejections simultaneously since both appear to inappropriately focus on the absence of a working example of certain embodiments within the scope of the claims. First, while it is recognized that the presence or absence of a working example

may be a factor in determining whether undue experimentation is required to practice the claimed invention, it has long been held that the absence of even one working example does not compel the conclusion that the specification does not satisfy the requirements of § 112. *In re Long*, 368 F.2d. 892, 895, 151 USPQ 640, 642 (C.C.P.A. 1966). See also M.P.E.P. 2164.02. Second, the Office should recognize that the present invention is an improvement over the articles and methods described in the *Selvig et al.* '689 patent and the *Powers et al.* '386 patent. As the Examiner correctly observed in the double patenting rejections, these patents are directed to antifouling compositions and methods that contain many of the same materials recited in the claimed article. The Office has also cited prior art such as *Scott et al.* (U.S. Patent No. 3, 095,307) and *Carney* (U.S. Patent No. 3,115,404) that teach the conventional expedient of associating a biological material with an inert carrier such as calcium carbonate and clay to distribute the biological material in the manner intended. Accordingly, the claimed invention uses technologies that are neither unpredictable nor undeveloped but uses them in ways that are not suggested by the prior art. Accordingly, it is respectfully submitted that the guidance provided by the specification and the twelve examples present in the specification provide more than sufficient information to those skilled in the art to permit them to practice the claimed invention within the entire scope of these claims, and thereby satisfy § 112, first paragraph. Accordingly, the Office is requested to withdraw these rejections.

Rejections Under 35 U.S.C. § 112, second paragraph:

Claims 6-8, 13-15, 17-19 and 22-23 have been rejected under 35 U.S.C. § 112, second paragraph as being indefinite for a variety of reasons. Some of these items can be grouped together and will be treated accordingly.

First, claims 6, 8, 13, 14, 15, 17, 18, and 20 have been rejected since there is allegedly insufficient antecedent basis for the limitations in the claim from which these claims depend. In each of these claims, a limitation is being added to the article that is not present in the claim or claims from which they depend. This is a proper function of a dependent claim, in accordance with 35 U.S.C. § 112, fourth paragraph. The Office is simply wrong to suggest that there is anything unclear or indefinite about adding a limitation that has no direct antecedent support in the claim from which it depends. Accordingly, these rejections should be withdrawn.

Claims 6 and 13-15 have been rejected in that the recitation "include" is allegedly indefinite since the Office is apparently unclear about its scope. The term "include" is understood to be an open term, similar to "comprising," and is neither unclear nor indefinite. A typical dictionary definition indicates that the term "include" means "to take in or comprise as a part of a whole." Webster's 9th New Collegiate Dictionary, page 609 (1991). Indeed, it has been recognized that the term "including" is synonymous with the term "comprising." H.K. Porter, Co. Inc. v. Gates Rubber, Co. 187 USPQ 692, 715 (DC Colo 1975). Accordingly, this rejection should be withdrawn.

Claim 8 has been rejected on the basis that the limitation "unwanted growth" is unclear, vague and indefinite. It is respectfully submitted that this term would be well

understood by those skilled in the art in the context of the claimed invention directed to an article characterized by reduced fouling or contamination of a surface. The active materials in the article are selected depending on the target contaminant for elimination as explained in paragraph three of the present application. The claims of U.S. Patent No. 6,342,386 provide further evidence that the removal of undesired or unwanted growth from a surface is well understood by those skilled in this art. Accordingly, this rejection should be withdrawn.

Claims 15 and 22-23 are allegedly unclear and indefinite since the meets and bounds for the term "binder" are not defined. The term "binder" is neither unclear or indefinite and is well understood by those skilled in the art as being a material that performs a binding function. The suggestion of the Office that the term could mean "an article where loose pages are kept securely" clearly demonstrates that the evaluation of the clarity of this language is not being addressed from the appropriate perspective of a person skilled in this art. Attention is further directed to prior art such as U.S. Patent No. 5,998,200 at col. 12, lines 14 - 29 that describes the conventional use of water-soluble and water-insoluble binders in the context of a coating for preventing fouling of an aquatic surface. Accordingly, this rejection should be withdrawn.

Finally, claims 16 and 19 have been rejected as being indefinite because the limitations "marine surface" and "marine environment" are allegedly unclear and indefinite. It is again respectfully submitted that a person of ordinary skill in this art would have no difficulty in ascertaining the meaning of these terms, particularly with the guidance and examples provided in the present specification. The Office is also

directed to the claims of U.S. Patent No. 5,919,689 which clearly demonstrates that terms such as "marine surface" have a clear and definite meaning in this art. Accordingly, this rejection should be withdrawn.

Rejection Under 35 U.S.C. § 102:

Claims 1-5, 7-16, and 19-25 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Selvig et al. (U.S. Patent No. 5,919,689). The Office takes the position that Selvig et al. teaches a marine surface coated with an antifouling coating composition that contains many of the same ingredients recited in these claims. It is further argued that, since Selvig et al. expressly teach coating the marine surface with their composition as a film, it inherently will have multiple layers. Finally, the Office takes the position that since the composition is comprised of enzymes and inorganic salt, the composition is inherently comprised of nutrients for a microorganism. This rejection is traversed.

The teachings of Selvig et al. are recognized and acknowledged in paragraphs 005 and 006 in the present specification. Paragraph 007 of the present specification and these claims point out some of the differences of the claimed invention over the disclosure of Selvig et al. Specifically, although Applicants take issue with the statement of the Office that multiple layers are inherently produced in the article of Selvig et al., it is recognized that this patent includes an explicit description (col. 6, lines 43-47) that the compositions and or paints may be applied as a single coating, or as multiple coatings. There is no teaching in Selvig et al. that these multiple coatings must be different in the manner specified in independent claims 1 and 20 and all dependent

claims currently under examination. In addition, there is no evidence, despite the Office's allegation to the contrary, that Selvig et al. describes the use of nutrients for the microorganism in any form in any coating formulation described in that patent. The mere fact that it may be possible for such an ingredient to be added in the coating formulations of Selvig et al. is not sufficient to establish inherency or anticipation.

A rejection under § 102 is only proper when the claimed subject matter is identically described or disclosed in the prior art. (In re Arkley, 455 F.2d. 586, 587 (C.C.P.A. 1972)); See also M.P.E.P. § 706.02(a) ("for anticipation under 35 U.S.C. § 102, the reference must teach every aspect either explicitly or impliedly"). Since Selvig et al. clearly does not teach every aspect of the claimed invention, this rejection is improper and should be withdrawn.

Rejections Under 35 U.S.C. § 103:

Claims 1-5, 7-16 and 19-25 have been rejected under 35 U.S.C. § 103(a) as being obvious over Selvig et al. (U.S. Patent No. 5,919,689) in view of Powers et al. (U.S. Patent No. 6,342,386). Although the Examiner apparently considers that these two documents are different, they contain the exact same disclosures since the Powers et al. patent is a continuation of the Selvig et al. patent. Accordingly, this rejection will be considered to be based on either patent. The Office acknowledges that the prior art references do not teach the same exact chronology or layering as recited for the claimed article. However, it is stated without any evidence to support the conclusion, that the adjustment of particular conventional working conditions is deemed merely a

matter of judicious selection and routine optimization of a result-effective parameter, which is well within the purview of a skilled artisan. This rejection is traversed.

When obviousness is based on a single prior art reference, there must be an evidentiary showing of a suggestion or motivation to modify the teachings of that reference to make the invention. *In re Kotzab*, 127 F.3d. 1365, 1370, 55 USPQ 2d. 1313, 1316-1317 (Fed. Cir. 2000). The evidence must compel the conclusion that a person skilled in the art would actually have made the necessary modifications, not simply that the person could have done so or, in hindsight, doing so seems possible. *In re Mills*, 916 F.2d. 680, 682, 16 USPQ 2d. 1430, 1432 (Fed. Cir. 1990).

As set forth in paragraph 007 of the present specification and the claimed invention, there are several distinctions of the claimed article over the teachings of both Powers et al. and Selvig et al. The Office has not established that any of these differences are “conventional” in the art in any environment or that a person of ordinary skill in the art would be motivated to use a nutrient as an ingredient in the coating formulations of Powers et al. or Selvig et al. Not only is there a total absence of any such suggestion, but there is no suggestion or motivation to include the nutrient in a layer different from that containing the microorganism. Further, there is no teaching or suggestion in the prior art relied upon by the Office that the layers in the coating should be different in any manner, to say nothing of the specific differences recited in the claims under rejection. In short, the Office has not demonstrated that the differences between the claimed article and the prior art as represented by either Powers et al. or Selvig et al. are conventional *per se*, or that there is any motivation or suggestion that

the prior art articles should be modified in a way that would produce the claimed article.

Finally, *prima facia* case of obviousness cannot be predicated on the bare assertion of a predictability of success that constitutes the sole basis for the position of the Office. Accordingly, the references relied upon by the Office do not establish a *prima facia* case of obviousness and these rejections should be withdrawn.

Claims 6, 17 and 18 have been rejected under 35 U.S.C. § 103(a) as being obvious over Selvig et al. in view of Powers et al. and further in view of Errede et al. (U.S. Patent No. 5,354,603) with evidence provided by Scott et al. (U.S. Patent No. 3,095,307) and Carney (U.S. Patent No. 3,115,404). As we understand this rejection, the additional prior represented by Errede et al., Scott et al. and Carney are directed to the limitations recited in claims 6, 17, and 18 *per se* and are not intended to address the deficiencies of both Powers et al. and Selvig et al. discussed above.

As noted above, none of the prior art either alone or in combination, teaches or suggests requirements of the claimed article having a coating comprising at least two layers that are different in at least the manner specified in independent claims 1 and 20. In addition, none of the references, either alone or in combination, teaches the desirability of adding a nutrient in a separate layer from the microorganism in the layered article of claim 20. The mere fact that these ingredients may be conventional *per se* does not provide any suggestion or motivation to use them in the manner or combinations required by these claims. Finally, there is no teaching or suggestion that there would be a predictability of success if the prior art articles taught in Powers et al and Selvig et al. were to be modified in the manner required by these claims. In short,

the Office has failed to establish a factual basis to support a *prima facia* case of obviousness. Accordingly, this rejection should be withdrawn.

Prompt and favorable reconsideration of this application is respectfully requested.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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